Young endothelial cells revive aging blood.

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Public Summary:

Scientific Abstract:
The hematopoietic system declines with age, resulting in decreased hematopoietic stem cell (HSC) self-renewal capacity, myeloid skewing, and immune cell depletion. Aging of the hematopoietic system is associated with an increased incidence of myeloid malignancies and a decline in adaptive immunity. Therefore, strategies to rejuvenate the hematopoietic system have important clinical implications. In this issue of the JCI, Poulos and colleagues demonstrate that infusions of bone marrow (BM) endothelial cells (ECs) from young mice promoted HSC self-renewal and restored immune cell content in aged mice. Additionally, delivery of young BM ECs along with HSCs following total body irradiation improved HSC engraftment and enhanced survival. These results suggest an important role for BM endothelial cells (ECs) in regulating hematopoietic aging and support further research to identify the rejuvenating factors elaborated by BM ECs that restore HSC function and the immune repertoire in aged mice.